



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/804,272

03/18/2004

Boon Keat Tan

70040133-1

7457

7590
Avago Technologies, Ltd.
P.O. Box 1920
Denver, CO 80201-1920

12/27/2006

EXAMINER

YAM, STEPHEN K

ART UNIT

PAPER NUMBER

2878

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/804,272

Applicant(s)

TAN ET AL.

Examiner

Stephen Yam

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 9, 2006 has been entered.

Double Patenting

2. Claims 1-12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11 of copending Application No. 10/804,286. Although the conflicting claims are not identical, they are not patentably distinct from each other because it is well known in the art to provide a color photodetector in combination with a color filter to detect a color image, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine a color photodetector array with the color filter and method of fabricating the color filter disclosed in claims 1-11 of Application No. 10/804,286, to provide accurate color image detection for a camera or optical scanner.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

Art Unit: 2878

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Sakamoto et al. US Patent No. 5,648,653.

Regarding Claim 3, Sakamoto et al. teach (see Fig. 2) a color sensor, comprising a plurality of photodetectors (6a-6c), a plurality of primary color filters (5c-5e), each primary color filter comprising a layer of material overlying a corresponding one of said photodetectors (see Fig. 2), each primary color filter transmitting light in a corresponding band of wavelengths (see Col. 4, lines 30-32) about a characteristic wavelength (red, green, blue), that primary filter transmitting more light at said characteristic wavelength than that primary color filter transmits at a wavelength outside of said band of wavelengths (see Col. 4, lines 30-32), and a first trim filter (4) overlying all of said photodetectors (see Fig. 2), said first trim filter comprising a layer of material that attenuates light at a first trim wavelength (<400nm or >650nm- see Fig. 6-10, 12 and Col. 4, lines 32-35) more than said first trim filter attenuates light at each of two of said characteristic wavelengths (see Fig. 6-10, 12), wherein said first trim filter comprises an interference filter (see Col. 4, lines 32-35, 57-62 and Col. 5, lines 38-48).

Allowable Subject Matter

5. Claims 1, 2, and 4-12 would be allowable by overcoming the provisional double-patenting rejection set forth in this Office Action.

Art Unit: 2878

6. The following is a statement of reasons for the indication of allowable subject matter:

Regarding Claims 1 and 9, the invention as claimed, specifically in combination with a plurality of primary color filters transmitting light about a characteristic wavelength, and a filter layer comprising a layer of material that attenuates light at a first trim wavelength more than it attenuates light at each of two of said characteristic wavelengths, wherein said first trim wavelength is between said two of said characteristic wavelengths, is not disclosed or made obvious by the prior art of record.

Response to Arguments

7. Applicant's arguments filed October 9, 2006 have been fully considered but they are not persuasive.

Regarding Claim 3, Applicant argues that the trim filter 4 of Sakamoto is not an interference filter, as Sakamoto teaches a single filter that blocks light over a wide range of wavelengths. Examiner contends that the trim filter 4 of Sakamoto is indeed an interference filter, and cites to Applicant, the definition of "interference filter" by the Photonics Dictionary (www.photonics.com) as:

A filter that controls the spectral composition of transmitted energy partially by the effects of interference. Frequently, these filters are made up of thin layers of metals and dielectrics, resulting in high transmission over narrow spectral bands.

url:

<http://www.photonics.com/directory//dictionary/lookup.asp?url=lookup&entrynum=2647&letter=i>

Art Unit: 2878

(emphasis placed in underline)

Furthermore, the trim filter 4 of Sakamoto is described as:

As a result of careful research regarding filters having less film thickness and film stress and good filter characteristics with a lower number of laminations, present inventors have found that the good filter characteristics of transmitting the light in the visible region and cutting off radiation in the wide invisible region can be obtained even with a thin film, with a constitution where the high refractive index dielectric layer and the metal layer are alternately laminated to further enhance the effect due to interference between the metal layer and the dielectric layer, and thus have attained the present invention.

That is, a filter for image sensor according to one embodiment of the present invention is formed as an element of sensor array to separate between the optical signal in the visible region and the optical signal in the invisible region, characterized in that the filter is composed of a plurality of layers consisting of a dielectric layer 21 and a metal layer 22, as shown in FIG. 4.

(Col. 5, lines 38-55, emphasis placed in underline)

Thus, Examiner asserts that Sakamoto discloses the trim filter as an interference filter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (571)272-2449. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

Art Unit: 2878

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571)272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SY

SY